REVISED CLAIMS

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1. (AMENDED) An improved thermally insulating jacket of a dewar [or of another cryogenic device,] having an inner wall and an outer wall, and having an inner space between said walls containing an insulating material, wherein said inner space also contains a moisture sorbing material and a getter material, wherein said moisture sorbing material is a moisture sorbing material, having a H_2O vapor pressure lower than 1 Pa at room temperature.

2. (AMENDED) An improved thermally insulating jacket of a dewar [or of another cryogenic device,] having an inner wall and an outer wall, and having an inner space between said walls containing an insulating material, wherein said inner space also contains a moisture sorbing material and a getter material, wherein said moisture sorbing material is a moisture sorbing material, having a H_2O vapor pressure lower than 1 Pa at room temperature and wherein said moisture sorbing material has a H_2O vapour pressure lower than 1 Pa at room temperature.

3. A jacket according to Claim 1 wherein said inner space also contains a hydrogen converter.

4. A process for producing the jacket of Claim 1, characterized by the following steps:

A. evacuating the inner space of the jacket down to a pressure lower than 100 Pa by means of a vacuum pump having a connection between the pump and the inner space of the jacket;

B. exposing said inner space contemporaneously to said moisture sorbing material while keeping the getter in an

inactivated form;

C. evacuating said inner space farther, down to a pressure lower than 5 Pa, by means of the vacuum pump;

D. activating said getter; and

E. isolating the jacket from the vacuum pump, by sealing the connection between said vacuum pump and the inner space of the jacket.

5. A process according to Claim 4 characterized in that during the exposing of step B, the evacuating according to Step A is discontinued.

6. A process according to Claim 4, characterized in that during the Steps A and B, the inner wall is kept hot at a temperature of not higher than 150°C thus promoting the release of water from the insulation material.

7. A process according to Claim 4, characterized in that the step B lasts for up to 48 hours.

8. A process according to claim 4 characterized in that said moisture absorbing material and said getter are lying, in separate locations, against the outer wall of said jacket.

9. A process according to Claim 8 characterized in that said moisture sorbing material and said getter are arranged in a container subdivided into an inner zone and an outer zone by a porous septum, wherein:

- the inner zone contains said getter;
- the outer zone is communicating with the inner zone containing said insulating material and contains said moisture sorbing material which prevents the passage of water vapour through said septum and towards said getter.

10. A process according to Claim 9 characterized in that said container is a vertical box having an opening at its uppermost portion and a planar septum.

11. A process according to Claim 9 characterized in that said container is a toroidal box having a radial or planar septum.

12. A process according to Claim 10, characterized in that said septum is horizontal.

14. A process according to Claim 9, characterized in that said container is made from a substantially water-free material, selected from the group consisting of metal, glass, ceramics and combinations thereof.

16. A process according to Claim 4, characterized in that said getter material is an alloy having the formula $BaLi_4$.

17. A process according to Claim 4 wherein step B lasts from about 2 to about 48 hours.

18. A process according to Claim 5 wherein step B lasts from about 2 to about 48 hours.

19. A process according to Claim 6 wherein step B lasts from about 2 to about 48 hours.

20. A process according to Claim 4, characterized in that said septum is horizontal.

21. A jacket of Claim 1 wherein said moisture sorbing material is selected from the group consisting of barium oxide, strontium oxide, phosphorous oxide, and mixtures thereof.

23. (AMENDED) A jacket of Claim 3 [22] wherein the hydrogen converter is selected from the group consisting of osmium oxide, iridium oxide, ruthenium oxide, rhodium oxide and palladium oxide.

24. (AMENDED) A jacket of Claim 3 [22] wherein the hydrogen converter is palladium oxide; the moisture sorbing material is barium oxide; and the getter material is a non-evaporable alloy consisting essentially of barium and lithium.

25. An improved thermally insulating jacket, having an inner wall and an outer wall, and having an inner space between said walls completely or partially filled with an insulating material, wherein said inner space also contains:

A. a moisture sorbing material selected from the group consisting of barium oxide, strontium oxide, phosphorous oxide, and mixtures thereof; and

B. a getter material which is an alloy of the formula $BaLi_4$.

26. An improved thermally insulating jacket, having an inner wall and an outer wall, and having an inner space between said walls completely or partially filled with an insulating material, wherein said inner space also contains:

A. a moisture sorbing material selected from the group consisting of barium oxide, strontium oxide, phosphorous oxide, and mixtures thereof; and

B. a getter material which is an alloy of the formula $BaLi_4$; and

C. a hydrogen converter selected from the group consisting of osmium oxide, iridium oxide, ruthenium oxide, rhodium oxide and palladium oxide.

27. An improved thermally insulating jacket, having an inner wall and an outer wall, and having an inner space between said walls completely or partially filled with an insulating material, wherein said inner space also contains:

A. a moisture sorbing material which is barium oxide; and

B. a getter material which is an alloy of the formula $BaLi_4$; and

C. a hydrogen converter which is palladium oxide.